

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

LIGHT TRANSFORMATION
TECHNOLOGIES LLC,

v.

LIGHTING SCIENCE GROUP
CORPORATION and HOME DEPOT U.S.A.,
INC.

CASE NO.: 2:12-cv-00826-MHS-RSP
(LEAD CASE)

LIGHT TRANSFORMATION
TECHNOLOGIES LLC,

v.

GENERAL ELECTRIC COMPANY;
GE LIGHTING SOLUTIONS, LLC;
GE LIGHTING, INC.; GE LIGHTING, LLC;
GE LIGHTING SYSTEMS, LLC; GE
LIGHTING SYSTEMS, INC.; AND
WAL-MART STORES, INC.

CASE NO.: 2:12-cv-00827-MHS-RSP

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TABLE OF DISPUTED CLAIM TERMS OR PHRASES

Disputed Claim Term or Phrase	Asserted Claim(s)	Defendants' Proposed Construction
1. "light transformer"	'911 patent, claim 6; '418 patent, claim 24; and '959 patent, claims 1, 3, 4, 6, 7	an optic that is not round in that it can be extended in a horizontal direction perpendicular to an optical axis
2. "axis of light direction"	'911 patent, claim 6; and '959 patent, claims 1, 3, 4, 6	Indefinite.
3. "low divergence or substantially parallel with an axis of light direction"	'911 patent, claim 6; and '959 patent, claims 3, 6	To the extent "axis of light direction" can be construed, Defendants propose the following construction: all rays from the light transformer are nearly parallel to an axis of light direction.
4. "redirecting" and "redirects"	'911 patent, claim 6; '418 patent, claim 24; and '959 patent, claims 1, 4, 6	changing the direction of light rays, while maintaining the ordering of the rays and the relative intensity among the ensemble of rays
5. "redistributing" and "redistributes"	'911 patent, claim 6; '418 patent, claim 24; and '959 patent, claims 1, 3, 4, 6	changing the angular intensity distribution of light from a light source by changing the ordering and relative intensity among the ensemble of rays ¹
6. "second end"	'911 patent, claim 6; and '959 patent, claims 1, 4	an end of the light transformer that is different than and discrete from the first, third, and fourth ends
7. "third end"	'911 patent, claim 6; and '959 patent, claims 1, 4	an end of the light transformer that is different than and discrete from the first, second, and fourth ends

¹ The proper construction of the terms "redirecting"/"redirects" and "redistributing"/"redistributes" renders the claims containing the phrase "redirects and redistributes" as inoperable (and thus invalid under 35 U.S.C. § 101 as lacking utility and invalid under 35 U.S.C. § 112, ¶ 1 as not being enabled), invalid under 35 U.S.C. § 112, ¶ 2 as being indefinite, or subject to improper recapture, prosecution history estoppel, or estoppel, or combinations of the above.

Disputed Claim Term or Phrase	Asserted Claim(s)	Defendants' Proposed Construction
8. "fourth end"	'911 patent, claim 6; and '959 patent, claims 1, 4	an end of the light transformer that is different than and discrete from the first, second, and third ends
9. "second member"	'911 patent, claim 6; and '959 patent, claims 1, 4	a member different than and discrete from the first member
10. "planar optical window"	'911 patent, claim 6; and '959 patent, claims 1, 7	an optical element that is planar and that has a neutral impact on the passage of visible light, meaning that major parameters of light do not change
11. "second planar optical window"	'911 patent, claim 6; and '959 patent, claims 1, 7	a planar optical window that is different than and discrete from the first planar optical window
12. "opening"	'959 patent, claims 4, 7	a gap or vacant space that has a neutral impact on the passage of visible light, meaning that major parameters of light do not change
13. "second opening"	'959 patent, claims 4, 7	an opening that is different than and discrete from the first opening
14. "symmetrical across the axis of light direction"	'911 patent, claim 6; '959 patent, claim 4; and '959 patent, claim 1	To the extent "axis of light direction" can be construed, Defendants propose the following construction: symmetrical on opposite sides of the axis of light direction, but not around the axis.
15. "output side of aspheric lens located between the first and the second planar optical windows"	'911 patent, claim 6; and '959 patent, claim 1	output side of aspheric lens located in the space separating the first and second planar optical windows and that does not extend past the plane defined by the first and the second planar optical windows
16. "output side of aspheric lens located between the first and the second openings"	'959 patent, claim 4	output side of aspheric lens located in the space separating the first and second openings and that does not extend past the plane defined by the

Disputed Claim Term or Phrase	Asserted Claim(s)	Defendants' Proposed Construction
		first and the second openings
17. “total internal reflection surface”	’911 patent, claim 6; and ’959 patent, claims 1, 4	a surface that reflects all of the light rays that strike it and does not allow any light rays to pass through it and that is designed by receiving maximum and minimum output angles; receiving a location of a portion of the light transformer with respect to a light source that provides light; and iteratively point-by-point calculating an optical transformer reflective surface by providing an associated increment for an output angle for each increment of an input angle, the associated increment for the output angle being consistent with a predetermined output intensity distribution to reflect light provided by the light source according to the received maximum and minimum output angles based on the received location of a portion of the light transformer
18. “curved conical reflective surface”	’418 patent, claim 24	a cone-shaped curved surface that reflects the light rays that strike it and that is designed by receiving maximum and minimum output angles; receiving a location of a portion of the light transformer with respect to a light source that provides light; and iteratively point-by-point calculating an optical transformer reflective surface by providing an associated increment for an output angle for each increment of an input angle, the associated increment for the output angle being consistent with a predetermined output intensity distribution to reflect light provided by the light source according to the received maximum and minimum output angles based on the received

Disputed Claim Term or Phrase	Asserted Claim(s)	Defendants' Proposed Construction
		location of a portion of the light transformer
19. "omnidirectional pattern in a horizontal plane"	'418 patent, claim 24	Indefinite. To the extent a construction is possible, GE and Walmart propose the following construction: pattern of light that is reflected in all directions in the plane that is perpendicular to the central axis of the light source.
20. "precalculated angular luminous intensity distribution in a vertical plane"	'418 patent, claim 24	an angular luminous intensity distribution in a vertical plane calculated in advance, where the transformer is designed taking into account the angular luminous intensity distribution of the light emitted by the light source as a design input parameter
21. "light pipe"	'418 patent, claim 24	an optical element that channels the light from the light source to the light transformer
22. "second end"	'418 patent, claim 24	an end that is different than and discrete from the first end
23. "lighting system"	'418 patent, claim 24	GE and Walmart, as to the accused GE products only, contend that this term should be given its ordinary and customary meaning. Walmart, as to the Great Value products only, proposes the following construction: a luminaire.
24. "close association"	'418 patent, claim 24	Indefinite.
25. "close proximity"	'418 patent, claim 24	Indefinite.

I. INTRODUCTION

This case involves three patents, U.S. Patent Nos. 6,543,911 (“the ’911 patent”), 8,220,959 (“the ’959 patent”), and 6,951,418 (“the ’418 patent”) (collectively, the “Asserted Patents”), relating to a structure for directing light rays.² The parties dispute the meaning of twenty-five (25) different claim terms in these three patents. Defendants’ constructions are appropriate because they are consistent with the plain language of the terms, the specifications, and the prosecution histories where the applicants described the meaning of each disputed term.

In contrast, LTT asks the Court to construe terms like “first,” “second,” “third,” and “fourth.” Defendants’ position is that each term should be construed based on its customary meaning, *i.e.*, that each is a distinct element (*e.g.*, first and second ends refer to two distinct ends). LTT disagrees, and asks this Court to ignore the plain meaning of these terms and instead construe them to add the language “in the context of a cross section.” This is inconsistent with the record and the law.

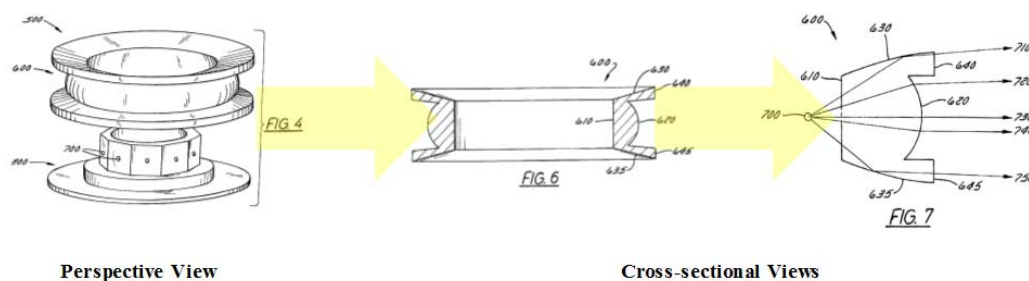
LTT also attempts to avoid key admissions it made during various phases of prosecution, even though these concessions were made to obtain patent protection. For example, LTT claims that “Plaintiff is no longer asserting the ’911 patent in these consolidated litigations.” D.I. 106, Plaintiff’s Opening Claim Construction Brief (“LTT Br.”) at 1. Despite LTT’s statement, the ’911 patent remains part of this litigation: LTT has not dismissed its claims, and the Defendants have pending counterclaims of non-infringement and invalidity. LTT’s statement is no doubt intended to avoid express statements made to the U.S. Patent and Trademark Office (“PTO”) in response to rejections of the claimed invention as non-novel and obvious, and to hide from the

² The ’418 patent is not asserted against Lighting Science Group Corp. and is no longer asserted against Home Depot U.S.A., Inc.

Court that claim 6 of the '911 patent was found to be invalid, and is currently under final rejection, during a pending *Inter Partes* Re-examination. Defendants respectfully request that the Court adopt its proposed constructions.

II. OVERVIEW OF THE PATENT

According to the specifications of the Asserted Patents³ applicants sought a solution to improve the illumination of obstructions on roadways and paths on airport taxi- and runways. Ex. A, '911 patent, at 1:10-27. Applicants described existing lighting systems as having “low efficiency” as they did “not sufficiently redirect light in an optimal pattern for drivers.” *Id.* at 1:25-27, 35-36. For example, applicants stated that existing lamps did “not provide adequate light to drivers located far away from the lamps,” did “not adjust for the fact that a driver can see the lamp better when the driver is closer to the lamp, and thus “direct[ed] only a portion of light emitted by a light source in a useful pattern.” *Id.* at 1:27-36. To overcome prior art, applicants described their invention as a structure for redirecting light with several distinct components, including four ends, two total light reflection members, and two optical windows (as shown below). LTT made further limiting statements during re-examination of the '911 patent. LTT cannot broaden its claims now to include more than applicants originally envisioned.



³ The specifications of the Asserted Patents are substantively identical, and the drawings are identical. Further, claim 6 of the '911 patent is substantively identical in many respects to claims 1 and 4 of the '959 patent. Citations to the claims, specification, and prosecution history are all to that of the '911 patent, unless otherwise noted.

III. LEGAL STANDARDS

“[T]he interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop within the claim.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc). As such, claim construction turns on the intrinsic evidence – the claims, specification, and prosecution history – because it is “the most significant source of the legally operative meaning of disputed claim language.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

The Court “must look at the ordinary meaning in the context of the written description and the prosecution history.” *Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005). The prosecution history is particularly useful because it is “evidence of how the PTO and the inventor understood the patent,” and it catalogs the patentee’s attempts “to explain and obtain the patent.” *Phillips*, 415 F.3d at 1317.

A claim term will not carry its ordinary meaning if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment or expressly disclaimed subject matter. *See Phillips*, 415 F.3d at 1316-17; *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995) (“Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers.”); *see also Bradford Co v. Conteyor N. Am., Inc.*, 603 F.3d 1262, 1270 (Fed. Cir. 2010); *Haynes Int’l, Inc. v. Jessop Steel Co.*, 8 F.3d 1573, 1577-78 (Fed. Cir. 1993). To that end, “[t]he prosecution history constitutes a public record of the patentee’s representations concerning the scope and meaning of the claims, and competitors are entitled to rely on those representations.” *Seachange Int’l Inc. v. C-Cor, Inc.*, 413 F.3d 1361, 1372 (Fed. Cir. 2005); *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003); *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1347 (Fed. Cir. 1998).

A patentee's statements and arguments to the PTO in one patent application also bind the patentee with respect to related applications. *See Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1306 (Fed. Cir. 2007). This is especially true when the related patent applications contain the same limitations or terms. *See, e.g., Omega Eng'g*, 334 F.3d at 1334 (“[W]e presume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning.”).

IV. ARGUMENT

A. Disputed Claim Terms Common to the '911, '418, and '959 Patents

1. “light transformer”

Defendants' Proposed Construction	LTT's Proposed Construction
an optic that is not round in that it can be extended in a horizontal direction perpendicular to an optical axis	Needs no construction. Alternatively, a structure that changes or transforms light in some manner.

This term presents two issues: (i) whether the preamble is limiting; and (ii) if so, what is the definition of “light transformer.” The patentee specifically addressed both issues before the PTO.

First, during re-examination of the '911 patent, the patentee repeatedly argued that the preamble is “necessary to give life, meaning and vitality to the claim.” Ex. B, 11/23/2010 *Inter Partes* Re-examination (“IPR”) Response and Amendment (“Amend.”), at 10 (emphasis in original). The patentee in fact argued for almost four pages to the PTO that the preamble is a necessary element of the claims. *Id.* at 10-14. In addition to the patentee's arguments, the preamble is necessary to provide context to the other claim limitations. For instance, the first element of claim 1 of the '959 patent recites “a first end that receives light from the light source.” Ex. C, '959 patent, at claim 1. The first end of what? And what light source? These limitations are rooted in the preamble. *See, e.g., C.W. Zumbiel Co. v. Kappos*, 702 F.3d 1371,

1385 (Fed. Cir. 2012) (“[T]he preamble constitutes a limitation when the claim(s) depend on it for antecedent basis, or when it is essential to understand limitations or terms in the claim body.” (internal quotations omitted)).

Second, the patentee expressly defined “light transformer” as used in the claim, and thus that definition should apply. *See Bradford Co.*, 603 F.3d at 1270. During prosecution of the ’911 patent, the patentees included a section titled “Basic Difference Between Claimed Light Transformer and Prior Art.” Ex. D, 1/28/2002 Amend., at 6. There, applicants distinguished certain prior art by explaining that “[t]he claimed light transformer in the present invention is symmetrical across the optical axis, meaning in two opposite directions, not necessarily around. As a result, *the claimed transformer may not be round* in that it can be extended in a horizontal direction perpendicular to the optical axis, or it can even be toroidal.” *Id.* (emphasis added).⁴

Applicants expressly disclaimed round transformers to gain allowance over the prior art that disclosed round transformers, *i.e.*, an “annular or circular design around the optical axis.” *Id.* Defendants’ construction, which directly tracks the disclaimer by the patentees, should be adopted. *See, e.g., Bradford Co.*, 603 F.3d at 1270; *see also Cordis Corp. v. Boston Sci. Corp.*, 658 F.3d 1347, 1356 n.5 (Fed. Cir. 2011) (“[D]isclaimer in the parent application carries forward into the construction of the same claim term in the child.”).

2. “redirecting” / “redirects”

Defendants’ Proposed Construction	LTT’s Proposed Construction
changing the direction of light rays, while maintaining the ordering of the rays and the relative intensity among the ensemble of rays	changing the direction of light rays

⁴ LTT’s reliance on the ordinary and customary meaning is unavailing. An electrical transformer is an electrical device that transfers energy between two circuits; this ordinary and customary meaning does not apply here.

“redistributing” / “redistributes”

Defendants’ Proposed Construction	LTT’s Proposed Construction
changing the angular intensity distribution of light from a light source by changing the ordering and relative intensity among the ensemble of rays	changing the angular intensity distribution of light rays, including changing the relative order or sequence of light rays

Defendants’ constructions for “redirecting” / “redirects” and “redistributing” / “redistributes” are supported by the intrinsic record, and incorporate the limitations argued by the applicant during prosecution to overcome prior art rejections.⁵ Applicants’ statements are thus limiting. *Bradford Co.*, 603 F.3d at 1270. During prosecution, applicants stated in response to an obviousness rejection of claim 6 of the ’911 patent that “[t]his is not just redirection (change of ray direction), but redistribution of light (change of angular intensity distribution).” Ex. D at 6-7. LTT provided further explanation during the subsequent re-examination of claim 6:

In general, *redirecting* light refers to changing a direction of a light rays, or changing the propagation direction of the light rays, while maintaining the ordering of the rays and the relative intensity among the ensemble of rays. *Redistributes* refers to a more complex operation, which involves a change in angular intensity distribution of the light from a light source.

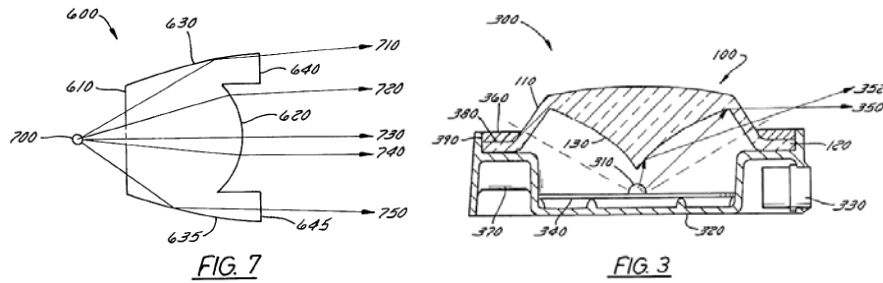
...

These parabolic surfaces in Muller, Nichols and Brown only *redirect* the light from the light source but do not *redistribute* the light, because there is no change in the angular intensity distribution of the incoming source light.

Ex. B, at 15; *see also* Ex. E, 8/18/2011 Respondent’s IPR Appeal Br., at 5.

Figure 7 depicts “redirection” and Figure 3 depicts “redistribution”:

⁵ These terms appear in the preamble and elements of claim 6 of the ’911 patent and claims 1 and 4 of the ’959 patent. LTT confirmed that the preamble of claim 6 of the ’911 patent includes limitations of on the claim. *See* section IV(A)(1), *supra*.



Ex. A at Figs. 3, 7; Ex. C, '959 patent, at Figs. 3, 7. As is shown in Fig. 7, the order of the light rays is maintained, and thus “redirected,” while the angular intensity/order of the light rays in Fig. 3 is changed (see crossing light rays 350, 352). Given the clear statements by LTT regarding the meaning and limitations of these terms, Defendants’ constructions incorporating those limitations should be adopted.

In contrast to Defendants’ constructions, LTT’s constructions improperly ignore the arguments relied on to gain allowance of the claims. LTT, however, cannot regain in claim construction what it disavowed during prosecution. *Bradford Co.*, 603 F.3d at 1270. Knowing this, LTT selectively quotes from the prosecution history to try and explain away its prior statements. But the prior statements are clear: “redirection” requires maintaining the order of the light rays, while “redistribution” requires reordering.

LTT argues that the use of the word “just” in the following statement somehow “informs the relationship” between “redirection” and “redistribution”: “This is not just redirection (change of [light] ray direction), but redistribution of light (change of angular intensity distribution.” LTT Br. at 17; Ex. D at 6-7. LTT, however, provides no explanation or support from the record for this statement. LTT, instead, superficially asserts that it is impossible for constructions of redirect and redistribute to be contradictory because redistribution must be one of a subset of possible things that can be done with redirection. But this unsupported allegation is contradicted by applicants’ own explanation of what these terms mean.

LTT's other argument – that statements it made during the '911 IPR do not support Defendants' constructions – is also unpersuasive. LTT asserts that its use of the phrase “[i]n general” before the word “redirecting” somehow makes the definition “changing a direction of . . . light rays . . . *while maintaining the ordering of the rays and the relative intensity among the ensemble of rays*” inapplicable to the claims. LTT Br. at 17 (italics in original); Ex. B at 15. LTT further argues that this “only makes sense in the case of an optic that only redirects light, but does not redistribute light.” LTT Br. at 17 (emphasis in original). But LTT's parsing of prior statements made during prosecution to now avoid invalidation of its claims is an improper attempt to salvage its infringement claims.

Notably, the parties' constructions of “redistributes” are not very dissimilar, but Defendants' construction more accurately reflects the intrinsic record. LTT asserts that its construction is the only one that makes sense, as that structure can only be used for a “nonimaging optic” because the sequence of light rays changes. *Id.* at 19. But this misses the point: LTT's arguments to the PTO were entirely directed to avoiding the various prior art references that were asserted during prosecution and led to the applicant's statements regarding the meaning of “redistributes.”⁶ As with LTT's proposed construction of “redirects,” its proposed construction of “redistribution” would result in improper recapture of claim scope disavowed during prosecution and should be rejected. *Cf. Bradford Co.*, 603 F.3d at 1270.

LTT's final argument is that Defendants' construction of “redirects” is somehow “improper” because it would result in rendering the applicable claims “collectively inoperable and therefore indefinite” and “would lead to [a] nonsensical result.” LTT Br. at 17-18. LTT's

⁶ Further, regarding “redistributes”, the figure that LTT refers to (Figure 7) does not show any light rays “crossing” one another like the figure in the lower left corner of page 18 of LTT's brief.

argument is misguided, however, because the Court should construe the claim terms in accordance with their meaning, and not in order to preserve their validity and operability. *See, e.g., Lucent Techs., Inc. v. Gateway, Inc.*, 525 F.3d 1200, 1215 (Fed. Cir. 2008) (“[W]e cannot construe the claim differently from its plain meaning in order to preserve its validity.” (quotation omitted)). That applicants’ arguments to gain allowance result in an inoperative combination cannot be remedied in claim construction. Defendants’ constructions should be adopted.

B. Disputed Claim Terms Common to the ’911 and ’959 Patents

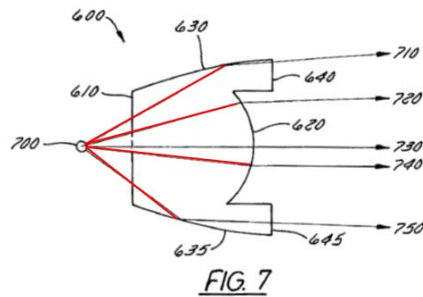
1. “Axis of Light Direction” Is Indefinite

A patent claim must particularly point out and distinctly claim the subject matter which the applicant regards as the invention. 35 U.S.C. § 112, ¶ 2. This bedrock requirement sets forth the precise “metes and bounds” of the patentee’s right to exclude. *IPXL Holdings, LLC v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005). Claims that are “not amenable to construction” thus are indefinite because they do not adequately convey the boundaries of the claimed invention. *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347-48 (Fed. Cir. 2005). “[I]ndefiniteness is a legal conclusion that is drawn from the court’s performance of its duty as the construer of patent claims.” *Personalized Media Commc’ns, LLC v. Int’l Trade Comm’n*, 161 F.3d 696, 705 (Fed. Cir. 1998).

The ’911 and ’959 patents discuss numerous elements in terms of “the axis of light direction,” including, for instance, “the first planar optical window being substantially perpendicular to the axis of light direction.” *See, e.g., Ex. C, ’959 patent at claim 1.* The ’911 and ’959 patents, however, fail to identify the specific axis or direction that constitutes “the axis of light direction.” This is particularly problematic because light propagates in three-dimensions and on an infinite number of axes. Indeed, the specification illustrates numerous exemplary axes

of light directions for any given viewpoint. *See, e.g.*, Ex. A at Fig. 7; Ex. C, '959 patent, at Fig. 7; *see also* LTT Br. at 6, 8.

Figure 7, for instance, depicts a cross-section showing the impact of the transformer on the light source. In that Figure, “light ray 730 propagates straight from the light source along *an axis* coincident with a radial line defining a radius of the circular reflective interior surface.” Ex. A at 4:62-66 (emphasis added). A radial line is any one of an infinite number of lines that extends from the center of a circle. In addition, each of light rays 710, 720, 740 and 750 also “propagates straight from the light source along *an axis* coincident with a radial line defining a radius of the circular reflective interior surface.” *Id.* (emphasis added); *see also id.* at 4:66-5:5.



But which one of those exemplary axes is “the axis of light direction”?

LTT’s only response is the conclusory statement that the term “is clearly not indefinite.” *See* LTT Br. at 21. LTT failed to provide a single construction of the term “axis of light direction.” Because “the axis of light direction” is insolubly ambiguous and “not amenable to construction” – even by LTT – the term is indefinite. *See, e.g., Datamize*, 417 F.3d at 1347 (internal quotations omitted); *see also Elcommerce.com, Inc. v. SAP AG*, 745 F.3d 490, 512 (Fed. Cir 2014) (if an independent claim invalid as indefinite, the dependent claims are also invalid).

2. “low divergence or substantially parallel with an axis of light direction”

Defendants’ Proposed Construction	LTT’s Proposed Construction
If “axis of light direction” can be construed, Defendants propose the following: “all rays from the light transformer are nearly parallel to an axis of light direction.”	Needs no construction. Alternatively, “low divergence” means diverging less than about 15 degrees from the axis of light direction.

If the Court finds that “axis of light direction” is capable of construction and not indefinite, Defendants propose a construction that takes into account the context of the claim term, which requires that *all rays* from the light transformer have “low divergence or [are] substantially parallel,” and that those two phrases – “low divergence” and “substantially parallel” – can be condensed to “nearly parallel.” For example, claim 1 of the ’959 patent requires that (1) the light transformer directs and redistributes “light from a light source,” (2) the first end “receives [the] light from the light source,” and (3) the second end “outputs the received light.”⁷ Ex. C, ’959 patent at claim 1, 9:34-37; *see also id.* at claim 4, 9:40-44, 10:17-18.

Claims 3 and 6, which depend from claims 1 and 4, respectively, further require that the light transformer “redirects and redistributes the light” in a particular way. *Id.* at claim 3, 10:13; claim 6, 10:53. Again, there is no recitation of a subset of the light rays from the light source, nor is there a discussion of a loss of rays during the directing and redistributing process. Therefore, the claim language makes clear that *all rays* received from the light source and that the light transformer “redirects and redistributes” must be subject to the claim limitation at issue here. This is also supported by the specification, which illustrates in Figure 7 that all light rays 710-750 are “refracted in a direction with low divergence or substantially parallel to light ray

⁷ The description of the beams as being refracted “in a direction with low divergence . . . [from] light ray 730” is equivalent to the statement that those beams are “substantially parallel to light ray 730.” Therefore, Defendants use the all-encompassing construction “nearly parallel.”

730.” *Id.* at 5:15-17. This portion of the specification also supports Defendants’ construction of “nearly parallel” as rays 710, 720, 740, and 750 are “substantially parallel” to ray 730. *Id.*

Unlike Defendants’ construction, which is supported by the claim language and the specification, LTT’s construction has no support in the patent, and should be rejected. LTT’s only support for its “about 15 degrees” construction is citation to a continuation-in-part to the ’911 patent at issue here – which by definition discloses subject matter beyond that in the ’911 patent and at issue in this case, *see* MPEP § 201.08 – and LTT does not even adopt the degree value range specified in that patent. LTT Br. at 22 (“[P]laintiff notes that a related patent discloses exemplary numerical value of *6 to 15* degrees for low divergence.” (emphasis added)). Regardless, LTT’s construction of “about 15 degrees” finds no support and should be rejected.

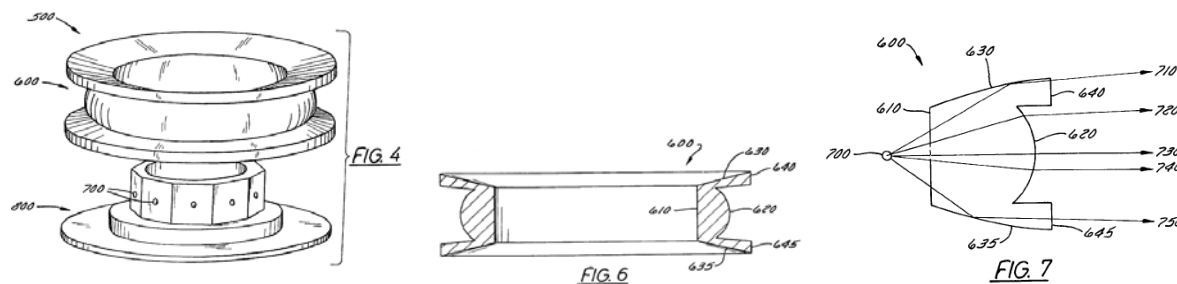
3. “symmetrical across the axis of light direction”

Defendants’ Proposed Construction	LTT’s Proposed Construction
If “axis of light direction” can be construed, Defendants propose the following: “symmetrical on opposite sides of the axis of light direction, but not around the axis.”	Needs no construction. Alternatively, the first planar optical window and the second planar optical window (or first window and second window) are symmetrical.

Defendants’ construction for “symmetrical across the axis of light direction” properly incorporates the statements made by applicants during prosecution, namely:

The claimed light transformer in the present invention is symmetrical across the optical axis, meaning in two opposite directions, not necessarily around. As a result, the claimed transformer may not be round in that it can be extended in a horizontal direction perpendicular to the optical axis, or it can even be toroidal.

Ex. D at 6 (emphasis in original). Figures 4, 6, and 7 of the ’911 and ’959 patents depict the fact that the second planar optical window or second opening is symmetrical on opposite sides, but not around, at least one axis of light direction, for example, potentially light ray 720, 730, 740:



Ex. A at Figs. 4, 6, 7; Ex. C, '959 patent, at Figs. 4, 6, 7. Defendants' construction comports with the intrinsic record and prosecution history and should be adopted.

Once again, LTT ignores the prosecution history and asserts that no construction is necessary. But it is improper to construe a term to include scope disclaimed by the applicant during prosecution. *Bradford Co.*, 603 F.3d at 1270. Rather than address the prosecution history, LTT states that Defendants' construction "with additional words of geometric precision would likely only tend to confuse rather than clarify," and "improperly and without basis imports a limitation from the specification." LTT Br. at 25. LTT's argument concedes that the wording "but not around the axis" is a limitation found in the specification, which is exactly what the applicants argued that during prosecution, thereby limiting the scope of the claim. LTT's attempt to ignore the prosecution history should be rejected.

4. "second end" / "third end" / "fourth end"

Defendants' Proposed Construction	LTT's Proposed Construction
"second end": an end of the light transformer that is different than and discrete from the first, third, and fourth ends	Needs no construction. Alternatively, in the context of a cross section of a light transformer, a second/ third/fourth extremity.
"third end": an end of the light transformer that is different than and discrete from the first, second, and fourth ends	
"fourth end" an end of the light transformer that is different than and discrete from the first, second, and third ends	

“second member”

Defendants’ Proposed Construction	LTT’s Proposed Construction
a member different than and discrete from the first member	Needs no construction. Alternatively, in the context of a cross section of a light transformer, a second region.

“second planar optical window”

Defendants’ Proposed Construction	LTT’s Proposed Construction
a planar optical window that is different than and discrete from the first planar optical window	Needs no construction, apart from “planar optical window,” above. Alternatively, a second element or region that is planar and that has a neutral impact on the passage of visible light, meaning major parameters of light do not change.

The dispute here does not relate to the meaning of “end,” but it surprisingly stems from the words “second,” “third” and “fourth.”⁸ During the meet-and-confer process, Defendants proposed the broad, ordinary meaning of these terms, *i.e.*, that there are a certain number (two to four, as applicable) of the given element. LTT, without explanation, took issue with Defendants’ construction, and argues that these common terms should be construed to mean “in the context of a cross section of a light transformer.” *Id.* at 22. LTT’s construction is meritless.

There can be no reasonable dispute that first, second, third and fourth are commonly understood to mean different and distinct multiples of something. This is the ordinary and customary meaning of such language. *See, e.g., Comaper Corp. v. Antec, Inc.*, 596 F.3d 1343, 1349 (Fed. Cir. 2010) (finding that construing “second opening” to require “a ‘*separate* opening’ from the first,” “faithfully track[ed] the ordinary and customary meaning of the term”); *Mass Engineered Design, Inc. v. Ergotron, Inc.*, 559 F. Supp. 2d 740, 754 (E.D. Tex. 2008)

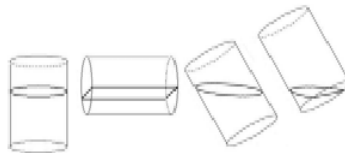
⁸ Similarly, the parties do not dispute the meaning of “member,” but rather the word “second.” And while the parties separately dispute the meanings of “planar optical window” and “opening,” the same analysis set forth here applies to “*second* planar optical window” and “*second* opening.” Additionally, the same analysis applies to “*second* end” for the ’418 patent.

(explaining that based on the “plain and ordinary meanings” with respect to “first position” and “second position,” “the descriptors ‘first’ and ‘second’ simply refer to two *distinct* positions” and thus the “first and second position” were “two *different* positions”) (emphases added).

LTT, however, seeks to expand this ordinary and customary meaning such that it be rewritten to state “in the context of a cross-section a first/second/third/fourth” This is inexcusably misleading. The entirety of LTT’s position rests in a single, conclusory sentence in the specification that describes an embodiment in the terms of a cross-section. But, neither the specification nor the language of the claims provide any indication that the claims are to be read in the context of a cross-section. Quite the contrary, all references in the specification to cross-sections are discussed in the express context of a three-dimensional light transformer, and not in the manner LTT suggests. *See, e.g.*, Ex. A at 4:48-49 (“FIG. 6 is an exemplary cross-sectional diagram of a light transformer 600. . . .”); *id.* at 4:56-57 (“FIG. 7 is another exemplary cross-sectional diagram of a light transformer. . . .”).

Even more telling here is the claim language itself. Had this meaning been the applicants’ intent, they could have easily stated so; but they did not. The Court should not be deceived into rewriting these claims.⁹ *See Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371,

⁹ Plaintiff’s position is misleading. A cross-section is entirely different from the three-dimensional embodiment because a cross-section of a cylinder can take many shapes including a rectangle, a circle, or an ellipse (illustrated below) depending on where the cross-section is taken. Yet, a cylinder cannot be said to have three or four straight sides as a cross-section may depict.



LTT’s construction would therefore require further construction of the term “cross section” as there is an infinite number of ways to cross-section a three-dimensional object.

1374 (Fed. Cir. 2004) (“This court, however, repeatedly and consistently has recognized that courts may not redraft claims”); *see also Lucent Techs.*, 525 F.3d at 1216 (same).

LTT does not – because it cannot – cite a single case for its strained interpretation as the case law regarding terms like “first” and “second” supports Defendants’ position. *See, e.g., Comaper Corp.*, 596 F.3d at 1349; *Mass Engineered*, 559 F. Supp. 2d at 754; *nCube Corp. v. SeaChange Int’l, Inc.*, 313 F. Supp. 2d 361, 371 (D. Del. 2004) (“[T]he Court construed ‘second network’ to be ‘distinct from the first network’”).¹⁰ In short, “first,” “second,” “third,” and “fourth” should be construed as commonly understood under the English language and patent law, and not to suit LTT’s infringement theory.

5. “planar optical window”

Defendants’ Proposed Construction	LTT’s Proposed Construction
an optical element that is planar and that has a neutral impact on the passage of visible light, meaning that major parameters of light do not change	an element or region that is planar and that has a neutral impact on the passage of visible light, meaning major parameters of light do not change

The parties propose very similar constructions, except that LTT adds the wording “or region” to its construction. Defendants’ construction should be adopted because it tracks the exact language applicants used to overcome a rejection from the PTO and does not add anything ambiguous to the plain meaning of the term. As stated by applicants in response to an Office Action from the PTO, “A ‘planar optical window’ means an optical element with neutral impact on the passage of visible light. In other words, major parameters of light such as frequency

¹⁰ *See also Aria Diagnostics, Inc. v. Sequenom, Inc.*, No. 11-06391, 2013 WL 5701532, at *14 (N.D. Cal. Oct. 16, 2013) (“[T]he plain language of the claim makes clear that, by labeling them the first and second chromosome, the terms are setting up distinct categories.”); *Biax Corp. v. Nvidia Corp.*, No. 09-CV-1257, 2010 WL 2539769, at *19 (D. Colo. June 21, 2010) (“[D]efendants are correct that the claims describe the ‘second circuit’ as being distinct from the ‘first’ On its face, the use of ‘first’ and ‘second’ distinguishes the two”), *aff’d*, 498 F. App’x 998 (Fed. Cir. 2013).

(wavelength), polarization, direction of propagation does not change.” Ex. D at 8. Defendants have adopted this statement nearly word-for-word as their construction here. *See also id.* at 9 (“The outer edge 27 (Fig. 1) of the polymorphic lens (4-56) is a part of mechanical structure, is not involved in optical performance at all, and in fact can be non-transparent. Not under any condition can outer edge 27 be considered as an optical window.”); *id.* (“The member 29 in Fig. 1 is a Fresnel lens (4-65 to 5-3), and cannot be considered as a planar optical window, because by the nature it collects light, changing direction of the rays.”).

LTT agrees with Defendants’ proposed construction, but adds “or region” to its construction to improperly broaden the scope of the claims. As a practical matter, this is unworkable and indefinite because a single window can have infinite “regions.” Moreover, because of LTT’s statement to the PTO during prosecution history, clearly setting forth that the planar optical window is an optical element – and *not* a “region” – LTT’s construction is barred by prosecution history estoppel and because applicants acted as their own lexicographer. *See Bradford Co.*, 603 F.3d at 1270. LTT’s argument that the planar optical window need not be a separate element is thereby improper.¹¹ *See* LTT Br. at 23 (“[D]efendants’ construction could potentially be read as excluding accused optics wherein the window may be located with an integral accused optic.”).

¹¹ Adopting LTT’s construction creates an indefinite term as it provides no objective standard to apply the claim. There is an infinite number of “regions” within the optic that could be “planar” depending on where the region is drawn. *See also infra* note 10.

6. “output side of aspheric lens located between the first and the second planar optical windows” / “output side of aspheric lens located between the first and the second openings”

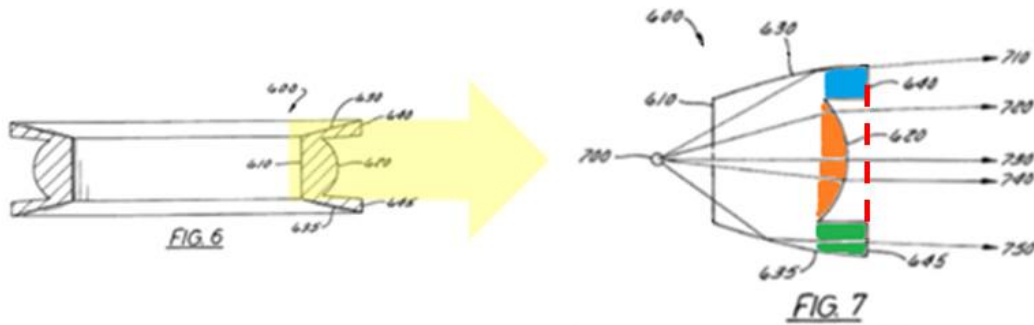
Defendants’ Proposed Construction	LTT’s Proposed Construction
output side of aspheric lens located in the space separating the first and second planar optical windows and that does not extend past the plane defined by the first and the second planar optical windows / openings	Needs no construction.

Defendants propose that the Court construe this phrase to mean that the output side of the aspheric lens is located in the space separating the first and second planar optical windows and does not extend past the plane defined by the first and the second planar optical windows, *i.e.*, in between the first and second planar optical windows. LTT takes issue with Defendants’ construction but fails to explain why it is improper or inconsistent with the plain meaning.¹²

First, the specifications of the Asserted Patents do not use the terms “output side of the aspheric lens” or “between the first and second planar optical windows”; these terms appear only in the claims. The primary guidance as to the import of this term thus comes from the drawings and claim language. *See CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1153 (Fed. Cir. 1997) (finding patent drawings highly relevant where the specification does not define a term).

In each figure, the output side of the lens is located horizontally and vertically between the first and second planar optical windows, as shown in the below illustration that modifies the depiction of the light transformer (600) in Figs. 6 and 7:

¹² The same construction applies to “output side of the aspheric lens is between the first and second *openings*.” *See* Ex. C, ’959 patent at claim 4.



The output side of the aspheric lens 620 (orange) is the rounded portion of the lens from which light rays 720-740 emit. Elements 640 and 645 are the first and second planar optical windows (blue and green, respectively). Thus, the output side of the lens 620 is in the space separating the first and second planar optical windows 640, 645, and it does not extend past the plane defined by the first and the second planar optical windows 640, 645 (illustrated by the dashed red line).

This construction is not only consistent with the plain meaning of “in between” but also is supported by the prosecution history. During the ’911 re-examination, the Examiner found that U.S. Patent No. 5,897,201 did not teach this claim limitation because it showed a lens extending beyond the plane of the optical window. Ex. F, 9/23/2010 Order Granting Request for IPR, at 5. Thus, Defendants’ position is consistent with the PTO’s construction, which is arguably broader than this Court need apply. *See In re Swanson*, 540 F.3d 1368, 1377-78 (Fed. Cir. 2008) (PTO applies the “broadest reasonable interpretation”).

LTT again fails to provide any definition or to identify what it contends is inaccurate in Defendants’ construction. LTT’s refusal to engage on this term, however, cannot overcome the plain language and intrinsic evidence. *See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008) (“When the parties raise an actual dispute regarding the proper scope of these claims, the court . . . must resolve that dispute.”).

7. “total internal reflection surface”

Defendants’ Proposed Construction	LTT’s Proposed Construction
a surface that reflects all of the light rays that strike it and does not allow any light rays to pass through it and that is designed by receiving maximum and minimum output angles; receiving a location of a portion of the light transformer with respect to a light source that provides light; and iteratively point-by-point calculating an optical transformer reflective surface by providing an associated increment for an output angle for each increment of an input angle, the associated increment for the output angle being consistent with a predetermined output intensity distribution to reflect light provided by the light source according to the received maximum and minimum output angles based on the received location of a portion of the light transformer	a surface that reflects all of the light rays that strike it and does not allow any light rays to pass through it

Defendants’ construction for “total internal reflection surface” is supported by the intrinsic record, and seeks to limit the term to the statement that the applicant made to obtain allowance. In particular, and as ignored by LTT, applicants stated during prosecution that:

Independent claims 6 [patent claim 2] and 11 [patent claim 6] claim a nonimaging device, designed by the method recited in allowed claim 5 [patent claim 1] and *have no alternative design* using a traditional imaging approach. . . . In particular, the method for designing is described on pages 11-14 [’911 patent, col. 6- 7]

Ex. D at 6-7 (emphasis added).¹³ Defendants’ construction simply incorporates applicants’ unambiguous statement that the “total internal reflective surface” of claim 6 incorporates the limitations of claim 1 of the ’911 patent. This is consistent with well-settled precedent. *See Bradford Co.*, 603 F.3d at 1270.

¹³ Applicants made similar statements limiting claim 6 throughout prosecution. *See, e.g.*, Ex. D at 9 (“In the claimed apparatus for different predetermined patterns, the same procedure (described in claim 5) results in a different profile of the curved conical reflective surface with different angular intensity distribution.”); Ex. G, 6/6/2002 Amend., at 5 (“Allowed claim 5 specifically recites the point by point iterative calculations for the reflective surface for the light transformer.”).

LTT's proposed construction for "total internal reflective surface" entirely ignores the applicants' statements during prosecution, and asserts that its construction "provides a simplified but useful definition for the well-known phenomenon known as total internal reflection." LTT Br. at 26. LTT's position is surprising, given that claim 6 of the '911 patent was rejected for that very reason, and that applicants overcame the rejection by expressly limiting the claim to "the method recited in allowed claim 5 [patent claim 1]" and asserting that there is "no alternative design using a traditional imaging approach." Ex. D at 6-7.

a. LTT's Improper Attempt to Avoid Limiting Statements

During prosecution of the '911 patent, the applicants canceled and amended several claims and added new claim 11 in response to prior art rejections from the PTO. *Id.* at 2-3, 4, 6-7. Application claim 11 recited, in relevant part, a "total internal reflection surface," *id.* at 2-3, and ultimately issued as claim 6 of the '911 patent.

Applicants explicitly argued that application claim 11 (patent claim 6) claims a "nonimaging device, designed by the method recited in allowed claim 5 and *ha[s] no alternative design* using a traditional imaging approach," knowing that claim 5 (patent claim 1) was allowable over the prior art. *Id.* at 6 (emphasis added). Applicants further stated that the "claimed optical transformers provide specific predetermined angular luminous intensity distribution." *Id.* In other words, applicants argued for the allowance of application claim 11 by declaring that the apparatus of that claim could *only be made one way, i.e.,* by the method of allowable claim 5 (patent claim 1). It was through these "limiting statements" that the Examiner ultimately allowed application claims 6 and 11.

Over nine years later – and after the validity of the '911 patent had come under attack – applicants changed their story during prosecution of the '959 patent, stating:

While Applicant does not believe that the device claims of the '911 patent or this application should be considered as products designed by any particular method, Applicants hereby wish to expressly disclaim any such statements as being limiting in any way in this application.

Ex. H, '959 patent, 10/8/2011 Amend. at 5.

This attempt to hide from the limiting statements made during the prosecution of the '911 patent is legally and factually insufficient. First, applicants did not put the Examiner on notice with respect to what they were allegedly disclaiming. Applicants merely told the Examiner – over *two months after* application claims 1-3 (which became issued claims 1-3 of the '959 patent) had been allowed – that they wanted to “expressly disclaim” statements made in the Amendment of January 28, 2002 filed in the '911 patent. That statement, however, did not tie these arguments to – let alone mention – any of the claims that had been allowed in the application that became the '959 patent, nor did applicants explain why this disclaimer had any relevance to the application in which it was submitted.

This vague statement falls far short of the clarity and timeliness required to put the Examiner on notice with respect to what applicants were trying to take back. *See Hakim v. Cannon Avent Group, PLC*, 479 F.3d 1313, 1318 (Fed. Cir. 2007) (“Although a disclaimer made during prosecution can be rescinded, permitting recapture of the disclaimed scope, the prosecution history must be sufficiently clear to inform the examiner that the previous disclaimer, and the prior art that it was made to avoid, may need to be revisited.”); *iLOR, LLC v. Google, Inc.*, 550 F.3d 1067, 1075 (Fed. Cir. 2008) (applicant’s “contemporaneous failure” to put the Examiner on notice formed part of the justification to reject an attempt to recapture surrendered subject matter).

Even if applicants had properly put the Examiner on notice that they were attempting to “take back” arguments related to the claims that eventually issued in the '959 patent (which they

did not) there is another significant reason why applicants' efforts fail. As stated above, during prosecution of the '911 patent, applicants explicitly acknowledged that there was "*no alternative design*" to constructing an apparatus containing a curved conical reflection surface or a total internal reflection surface using the "method recited in claim 5." Applicants (and LTT) are running away from the very reason that claim 6 of the '911 patent was patentable in the first place. Given the fact that claim 1 of the '959 patent is virtually identical to (and perhaps broader than) claim 6 of the '911 patent, applicants' and LTT's gamesmanship should be rejected.

b. LTT's Other Arguments Lack Merit

LTT also claims that Defendants' construction "improperly seeks to read limitations from the specification into the claims." LTT Br. at 26. LTT's argument is belied by the prosecution history it ignores. Defendants' construction reflects the statements applicants made during prosecution to overcome prior art rejections by describing the terms "total internal reflection surface" and "curved conical reflection surface." Such statements "limit[] the interpretation of [the] claims" and "exclude any interpretation that may have been disclaimed or disavowed during prosecution" because those statements were "made to convince the examiner of the patentability of the claimed invention." *Bradford Co.*, 603 F.3d at 1270 (internal quotations omitted).

LTT's attempts to cast Defendants' construction as a "product by process" claim also fail. *First*, as explained above, applicants expressly and unambiguously adopted the language of claim 1 of the '911 patent into claim 6 of the '911 patent, which claims 1 and 4 of the '959 patent track. *Cf. id.* *Second*, Defendants' proposed construction is not written as a product-by-process claim; it simply recites the language that applicants themselves used to overcome prior art during prosecution and obtain the patent. *Cf. Southwall Techs.*, 54 F.3d at 1576 (finding the applicant "necessarily disclaimed the examiner's interpretation of . . . a two-step process" because the

applicant explained that its “composite film” was created by a one-step process and limiting the claim term to “exclude any dielectric layer formed by the two-step process”).

C. Disputed Claim Terms in the ’959 Patent Only: “opening”¹⁴

Defendants’ Proposed Construction	LTT’s Proposed Construction
a gap or vacant space that has a neutral impact on the passage of visible light, meaning that major parameters of light do not change	Needs no construction. Alternatively, a gap or vacant space.

The specification and file history are silent on the use of the term “opening.” There is no reasonable way to interpret this term without reference to the fundamental feature of the “planar optical window” discussed above – namely to radiate light rays from a light source with low divergence. *See, e.g.*, Ex C, ’959 patent, at Abstract (“a substantial amount of light may be reflected in a pattern with low divergency [sic] or parallel with an axis of the light transformer”); 2:6-8; 5:15-21. Defendant’s proposed construction reflects this fact.

LTT’s construction, however, would permit the major parameters of the light rays to change, in contravention to the problem that the patent sought to address. Further, LTT cites no support in the specification or file history for a light transformer that *does not prevent* the major light parameters from changing. As a result, LTT’s proposed construction seeks to improperly broaden the subject matter of the invention and should be rejected.

D. Disputed Claim Terms in the ’418 Patent Only

1. “curved conical reflective surface”

Defendants’ Proposed Construction	LTT’s Proposed Construction
a cone-shaped curved surface that reflects the light rays that strike it and that is designed by receiving maximum and minimum output angles; receiving a location of a	Needs no construction. Alternatively, a reflective surface in the shape of a cone having a curved

¹⁴ These arguments apply equally to the disputed claim term “second opening” from claim 4 of the ’959 patent; Defendants’ position with respect to “second” is set forth in Section IV(B)(4), *supra*.

portion of the light transformer with respect to a light source that provides light; and iteratively point-by-point calculating an optical transformer reflective surface by providing an associated increment for an output angle for each increment of an input angle, the associated increment for the output angle being consistent with a predetermined output intensity distribution to reflect light provided by the light source according to the received maximum and minimum output angles based on the received location of a portion of the light transformer	edge when the surface of the transformer is viewed from the side or in profile.
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Defendants' arguments with respect to "curved conical reflective surface" are the same as those for "total internal reflection" set out in Section IV(B)(7), *supra*. Defendants incorporate those arguments herein.

2. "omnidirectional pattern in a horizontal plane"

Defendants' Proposed Construction	LTT's Proposed Construction
Indefinite. To the extent a construction is possible, GE and Walmart propose the following: pattern of light that is reflected in all directions in the plane that is perpendicular to the central axis of the light source.	the intensity of the emitted light is the same in all directions in a horizontal plane (i.e., when the light pipe is viewed from the top or bottom)

This claim term is indefinite. There are an infinite number of horizontal planes in which a light pattern can be present. Neither the claims nor the specification, however, provides any guidance as to which is the proper horizontal plane. There is simply no teaching in the patent that would allow a person of ordinary skill in the art to understand the boundaries of the claimed invention in view of the ambiguity in this term. *Cf. Datamize*, 417 F.3d at 1347.

To the extent that the term can be construed, GE and Walmart's proposed construction is supported by the specification, which provides that "[t]he optical window 110 may comprise an omnidirectional window or it may comprise any other means for transmitting light, such as lenses, diffusers or open areas" that "distribute light out of the light transformer 100 in a 360 degree pattern." Ex. I, '418 patent, at 3:37-43; *see also id.* at 3:59-4:7 ("semi-flush

omnidirectional luminaire 300”); 8:63-9:13 (“omnidirectional luminaire”). The specification further discusses “an omnidirectional light pattern in a *horizontal plane* with a precisely predetermined luminous intensity distribution in the *vertical plane* . . . encircled by a toroidal precision optical transformer 1520.” *Id.* at 7:67-8:5 (emphasis added). Hence, the omnidirectional light pattern is on a horizontal plane with respect to the vertical axis of the light source. *See id.* at 6:5-12, Figs. 12, 17. This is Defendants’ alternative proposed construction.

In contrast, LTT’s construction uses the top or bottom of the light pipe as a point of reference. This is too broad and finds no support in the intrinsic record. Contrary to the express claim language, LTT’s construction conflates the proposed meaning of “omnidirectional pattern in a horizontal plane” with the separate and distinct claim limitation “precalculated angular luminous intensity distribution in a *vertical plane*.” LTT’s construction never identifies which horizontal plane is the “horizontal plane” of the claim¹⁵ and ignores that the “omnidirectional pattern in a *horizontal plane*” must be perpendicular to the central axis of the light source, which lies in a vertical plane. *See, e.g., id.* at Fig. 12.

3. “precalculated angular luminous intensity distribution in a vertical plane”

Defendants’ Proposed Construction	LTT’s Proposed Construction
an angular luminous intensity distribution in a vertical plane calculated in advance, where the transformer is designed taking into account the angular luminous intensity distribution of the light emitted by the light source as a design input parameter	the angular intensity of the emitted light, when viewed in a vertical plane (i.e., when the light pipe and transformer are viewed from the side), forms a pattern that is calculated or specified in advance

Defendants’ construction is supported by the intrinsic evidence. The specification teaches designing the claimed light transformer by “iteratively, point-by-point, calculating an

¹⁵ Further, LTT acknowledges that GE and Walmart’s “words to describe the horizontal plane [are] accurate.” LTT Br. at 27.

optical transformer reflective surface by providing for each increment of an input angle, an associated increment of the output angle” based on “maximum and minimum output angles” and “a location of a portion of the light transformer with respect to a light source that provides light.” *Id.* at 2:28-36; *see also id.* at 7:55-61. The specification also describes that “when a single-source luminous intensity distribution does not provide adequate illumination to match desired specifications, an alternative design with multiple light sources, such as depicted in FIG. 5 above, can be implemented” to create a system “that provides an omnidirectional light pattern in a horizontal plane with a precisely predetermined luminous intensity distribution in the vertical plane.” *Id.* at 7:62-8:2; *see also id.* at 5:57-63 (calculations are used to create “an arbitrary aspherical reflective surface . . . that will provide equal omnidirectional patterns in a horizontal space with precisely predetermined luminous intensity distribution in the vertical plane utilizing . . . light sources with given photometric characteristics.”).

The prosecution history of the parent ’911 patent also supports Defendants’ position. In it, applicants attempted to overcome a prior-art rejection by arguing that “the precalculated angular intensity distribution requires an analytical description of the light emitted by the light source and analytical or graphical tools to calculate the light transformer curvature according to the outgoing pattern specification [and that a]llowed claim 5 specifically recites the point by point iterative calculations for the reflective surface for the light transformer.” Ex. G at 5.

In contrast, LTT’s construction ignores the specification and prosecution history and attempts to broaden the scope of the claim to permit determining the luminous intensity distribution without considering the light transformer design. For example, LTT ignores applicants’ statement that “[a] predetermined pattern means that emitted angular luminous intensity distribution is given as a primary design parameter and profile of the curved conical

reflective surface because of a secondary function as result of design” and that “for different predetermined patterns, the same procedure (described in claim 5) results in a different profile of the curved conical reflective surface with different angular intensity distribution.” Ex. D at 11. By these statements, applicants distinguished over a prior-art reference because the approach “is not predetermined” because in that reference, “design is primary, and the pattern secondary.” *Id.*

LTT cannot now say that the “precalculated angular luminous intensity distribution in a vertical plane” is not a design input parameter of the light transformer – such a construction is contrary to the teachings of the patent and express statements made during prosecution.

4. “light pipe”

Defendants’ Proposed Construction	LTT’s Proposed Construction
an optical element that channels the light from the light source to the light transformer	an optical structure that transfers light

Defendants’ proposed construction is supported by the intrinsic record and the widely accepted definition of a “light pipe” in the industry.¹⁶ The specification describes the functionality of the claimed “light pipe” such that “[t]he input surface 1820 can direct the light through the *light channel 1840* by way of total internal reflection *to the reflective surface 1830*.” Ex. I, ’418 patent, at 9:6-8 (emphasis added). Therefore, the “light channel 1840,” or “light pipe,” must channel the light from a light source to the light transformer, as Defendants’ construction reflects.

In contrast, LTT’s construction is not supported by the specification, and is contrary to statements made during prosecution of the ’418 patent. LTT’s construction improperly broadens the definition of a light pipe to encompass structures such as lenses, collimators, diffusers,

¹⁶ See Ex. J, Photonics Dictionary Plus (defining “light pipe” as “[t]ransparent matter that usually is drawn into a cylindrical, pyramidal or conical shape *through which light is channeled from one end to the other by total internal reflections*”) (emphasis added).

optical reflectors, or reflective surfaces. But, the patent already distinguishes such structures. As shown above, the specification distinguishes “light channel 1840” from “reflective surface 1830,” and the claim language similarly distinguishes the “light pipe” from the “light transformer” or “reflective surface.” Ex. I, ’418 patent, at 9:6-8, claim 24. Further, applicants expressly disavowed a broad construction when it distinguished “light pipe” from a simple light transfer assembly during prosecution of the ’418 patent in order to overcome a prior art rejection. Ex. K, ’418 patent, 11/16/2004 Amend. at 12 (prismatic transparent body in prior art “cannot be considered a light pipe which is an axis symmetrical linear structure”). LTT’s construction therefore ignores the specification and improperly seeks to recapture broad claim scope. *See Phillips*, 415 F.3d at 1317 (“The purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution.”) (internal quotations omitted). LTT’s construction should be rejected.

5. “lighting system”

Defendants’ Proposed Construction	LTT’s Proposed Construction
<p>GE and Walmart, as to the accused GE products only, contend that this term should be given its ordinary and customary meaning.</p> <p>Walmart, as to the Great Value products only, proposes the following: a luminaire.</p>	None provided

Walmart, as to the Great Value Products only, asserts that the proper construction is “a luminaire.” The title of the patent refers to the invention as a “Highly Efficient Luminaire Having Optical Transformer Providing Precalculated Angular Intensity Distribution and Method Therefore.” The Abstract repeatedly refers to the invention as a luminaire. Ex. I, ’418 patent, Abstract (“A highly efficient luminaire. The luminaire includes a light source that emits light. . . . The light is transmitted to the exterior of the luminaire by an optical window.”). The term luminaire is used to describe the lighting system in the context of the claimed invention.

And as the patent makes clear, a lighting system is distinct from a lamp or light source. *See id.* at 1:16-36; 4:44-47. Thus, Walmart’s construction, which is consistent with the patent specification, should be adopted.¹⁷

6. “close association” / “close proximity”

Defendants’ Proposed Construction	LTT’s Proposed Construction
Indefinite	Needs no construction. Alternatively, near or close by

These terms are indefinite because the claim language provides no objective basis by which a person skilled in the art could ascertain their meaning. Further, the terms are not used or otherwise defined in the patent specification or prosecution history. If any construction can be provided, the terms should not be construed identically. The applicants used the terms separately in claim 24 of the ’418 patent, presumably to give the terms different meanings. Preserving claim integrity requires that two terms in a claim necessarily connote different meanings. *See Ethicon Endo-Surgery v. United States Surgical Corp.*, 93 F.3d 1572, 1579 (Fed. Cir. 1996).

LTT’s proposed construction of “near or close by” has the same problem that affects the terms it seeks to construe. There is no teaching in the patent that would allow a person of ordinary skill in the art to discern the boundaries of the claimed invention in view of the ambiguity in this term. *See Datamize*, 417 F.3d at 1347.

V. CONCLUSION

For the foregoing reasons, Defendants respectfully submit that their foregoing claim constructions should be adopted.

¹⁷ Even though LTT does not believe this term should be construed, “[w]hen the parties present a fundamental dispute regarding the scope of a claim term, it is the court’s duty to resolve it.” *O2 Micro*, 521 F.3d at 1362.

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Respectfully submitted,

/s/ Michael H. Jacobs

Michael H. Jacobs
(DC Bar # 455043) (pro hac vice)
Lucy Grace D. Noyola
(DC Bar # 985723) (pro hac vice)
CROWELL & MORING LLP
1001 Pennsylvania Avenue, N.W.
Washington, DC 20004-2595
Office: (202) 624-2500
Fax: (202) 624-5116
mjacobs@crowell.com
lnoyola@crowell.com

*Attorneys for General Electric Company,
GE Lighting Solutions, LLC, GE Lighting, Inc.,
GE Lighting, LLC, GE Lighting Systems, LLC,
and GE Lighting Systems, Inc.*

/s/ Arthur P. Licygiewicz

Arthur P. Licygiewicz
Ohio Bar No. 0068458
Megan D. Dortenzo
Ohio Bar No. 0079047
THOMPSON HINE LLP
3900 Key Center
127 Public Square
Cleveland, Ohio 44114
Telephone: (216) 566-5500
Facsimile: (216) 566-5800
art.licygiewicz@thompsonhine.com
megan.dortenzo@thompsonhine.com

Attorneys for Wal-Mart Stores, Inc.

/s/ Michael C. Smith

Michael C. Smith
State Bar No. 18650410
SIEBMAN, BURG, PHILLIPS & SMITH, LLP
113 East Austin Street
P.O. Box 1556
Marshall, TX 75671-1556
Office: (903) 938-8900
Fax: (903) 472-4301
michaelsmith@siebman.com

*Attorney for General Electric Company,
GE Lighting Solutions, LLC, GE Lighting, Inc.,
GE Lighting, LLC, GE Lighting Systems, LLC,
GE Lighting Systems, Inc., and
Wal-Mart Stores, Inc.*

/s/ Kal K. Shah

Kal K. Shah
Adam Wolek
Anthony Blum
THOMPSON COBURN LLP
55 East Monroe Street, 37th Floor
Chicago, Illinois 60603
(312) 346-7500
THOMPSON COBURN LLP
One US Bank Plaza
St. Louis, Missouri 63101
(314) 552-6000
kshah@thompsoncoburn.com
awolek@thompsoncoburn.com
ablum@thompsoncoburn.com

Eric H. Findlay
FINDLAY CRAFT, LLP
6760 Old Jacksonville Hwy, Ste. 101
Tyler, TX 75703
(903) 534-1100
efindlay@findlaycraft.com

*Attorneys for Lighting Science Group Corp. and
Home Depot U.S.A., Inc.*

CERTIFICATE OF SERVICE

I certify that on May 20, 2014, a copy of the foregoing was filed electronically and served by operation of the Court's electronic filing system.

/s/ Michael H. Jacobs

Michael H. Jacobs